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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/788,065	02/16/2001	Hai Thanh Ho	STL9690	5099

7590 06/10/2004

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EXAMINER	
SNIEZEK, ANDREW L	

ART UNIT	PAPER NUMBER
2651	8

DATE MAILED: 06/10/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/788,065	Applicant(s) HO ET AL.	
	Examiner Andrew L. Sniezek	Art Unit 2651	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *14 July 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-10 and 12-17* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2,4,6-10 and 12-17* is/are rejected.

7)☒ Claim(s) *3 and 5* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

1. The following action is taken in view of the amendment filed 7/14/03.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 6, 9 and 10 are rejected under 35 U.S.C. 103 (a) as being unpatentable over Okamura ('285) in view of Sri-Jayantha et al. (US 2002/0034036 A1)

Okamura teaches in column 9, line 44 – column 10, line 65 a data handling system including a recording surface (32), an actuator (36) and a servo circuit (23) that is used to position the actuator across the disk. As discussed in the noted columns a seek can be performed to move the actuator from a current position to a destination position. Also, taught is a filter (17) that is turned on during a settling mode (column 10, line 63) to suppress the resonance characteristics of the actuator produced while

moving from a current position to a destination position. Claim 6 additionally sets forth that the filter is coupled in parallel with the servo controller. The filter in Okamura is disclosed in series with the servo controller. Sri-Jayantha et al. teaches in a similar apparatus (figures 6a and 6b) that a filter (140) to suppress a resonance characteristic of an actuator can be alternatively placed either in series with a servo controller or in parallel with a servo controller. It would have been obvious to one of ordinary skill in the art at the time of the invention to change the filter placement as taught by Okamura (series) to an alternative location that is parallel with the servo controller as taught by Sri-Jayantha et al. in order to minimize computational delay. The claimed second order filter as set forth in claim 9 is satisfied by the equations described in column 11 of Okamura. The limitations of claim 10 are deemed satisfied by the teaching provided in column 10 of Okamura discussing the use of plural heads.

3. Claims 1, 2, 4, 8, 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Okamura ('285) and Sri-Jayantha et al. as applied to claims 6, 9 and 10 and further in view of Waugh et al. ('615).

The teachings of Okamura and Sri-Jayantha et al. as discussed above and incorporated herein. Claim 8 further sets forth the circuit for identifying a frequency of actuator arm oscillation induced by resonance mode excitation. This identifying means is not clearly discussed in Okamura, only that a filter is used to suppress the resonance mode present in the signal. Waugh et al. teaches in a similar arrangement that it is well known to have a means for identifying a frequency of actuator arm oscillation induced by resonance mode excitation. This means is the structure that performs seek to a

destination track by a maximum acceleration and decelerations, (abstract). It would have been obvious to one of ordinary skill in the art to incorporate such a means in the combination of Okamura and Sri-Jayantha et al. as applied in order to identify the resonance of a particular actuator and then use a filter as taught by Okamura/Sri-Jayantha et al. to eliminate the induced resonance during the positioning of the actuator across the disk. Method claims 1, 12 and 2 are drawn to the method of using the corresponding apparatus claimed in claims 8/6, where the newly set forth limitation "feedforward" (claim 1) corresponds to the "parallel" limitation of claim 6. Therefore method claims 1,2 and 12 correspond to apparatus claims 8/6 and are rejected for the same reasons of anticipation (obviousness) as used above. The limitations of claim 4 are deemed satisfied by the use of the notch filter (5) as taught by Okamura.

4. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Okamura and Sri-Jayantha et al. as applied to claims 6, 9 and 10 above, and further in view of Ottesen et al. ('599)

The teachings of Okamura and Sri-Jayantha et al. have been discussed above and are incorporated herein. Claim 7 further sets forth the use of a demodulator and a motor driver, which are used to position the actuator across the disk. Although not specifically taught in Okamura such features are well known in the art as seen from Ottesen et al. (figure 2) as an alternative actuating arrangement. It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate such well-known features in the device of Okamura and Sri-Jayantha et al. to provide an

alternative driving arrangement since each produce the same results of moving the actuator across the disk.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. Claims 13-14 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Claim 13 sets forth minimizing a frequency relative to a position error signal ... "independent of whether the frequency is a resonance mode of the controlled system". The written specification does not support such a limitation. It is clear that the specification supports minimizing a frequency that is directly dependent on the frequency of a resonance mode of the controlled system. The specification does not describe under what other conditions that the frequency is minimized. This feature must be cancelled without such support in the written specification. Claim 14 inherits the language of claim 13.

7. It is noted that newly presented independent claims 13 and 15 set forth a methed including the "step of", which language does not fall within 35 USC 112 paragraph 6.

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

9. Claims 13-17 are rejected under 35 U.S.C. 102(e) as being anticipated by Sri-Jayantha et al.

Sri-Jayantha et al. teaches a method and system for detecting and correcting undersirable vibrations impacting a servo system (see abstract). These vibrations can consist of at least three different types as disclosed in the background of the invention. Not all are resonance modes of the controlled system. The method of minimizing the frequency relative to a position error as set forth in claim 13 is satisfied by the used of the filter(s) as described with respect to figures 6a and 6b of Sri-Jayantha et al. and as previously noted with respect to the background of the invention the frequency minimized is independent of whether the frequency is a resonance mode of the controlled system as set forth in claim 13. Furthermore the limitations of claim 14 directed to minimizing the frequency when the frequency is not a resonance mode of the control system is satisfied by the use of filters that take into account of random vibrations resulting from unpredictable external events. The limitation of increasing a sensitivity of a control system at a frequency to minimize a frequency relative to a position error, claim 15, is satisfied by the determination of filter characteristics and its

implementation in a control system which changes the sensitivity of the control system as set forth. As shown for example in figure 6b of Sri-Jayantha et al. a signal V(n) produced by a filter arrangement (140) is injected into the control arrangement that is added to signal U(n) that changes the sensitivity of the system. The filter characteristics as disclosed (step 2) includes gain adjustment satisfying the limitations of claims 16-17.

Allowable Subject Matter

10. Claims 3 and 5 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

11. The following is a statement of reasons for the indication of allowable subject matter: The claimed method as set forth in claim 3/1 that removes the compensation signal while in the track following mode is neither taught by nor an obvious variation of the art of record. The claimed method as set forth in claim 5/4/1 that has a compensation signal generated in a manner as set forth is neither taught by nor an obvious variation of the art of record.

Conclusion

Response to Arguments

12. Applicant's arguments with respect to claims 1-17 have been considered but are moot in view of the new ground(s) of rejection.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew L. Sniezek whose telephone number is 703-308-1602. The examiner can normally be reached on Mon.-Fri..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Hudspeth can be reached on 703-305-4700. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9314 for regular communications and 703-872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-306-0377.

A.L.S.

6/10/04

ANDREW L. SNIEZEK
PRIMARY EXAMINER